WHAT IS CLAIMED IS:

1. An immobilized catalytically active metal chelate complex which comprises a catalytically active complex of a metal ion, which is capable of hydrolyzing one or more groups selected from the group consisting of phosphate, phosphono and phosphoro groups, immobilized on a support.

2. The immobilized complex of claim 1, wherein the support is in the form of solid particles.

3. The immobilized complex of claim 2, wherein the support comprises a material selected from the group consisting of silica and chitosan.

4. The immobilized complex of claim 1, wherein the support is a porous solid material.

5. The immobilized complex of claim 1, wherein the support is in the form of a wipe, sponge or filter.

6. The immobilized complex of claim 1, wherein the support is a polymeric solid.

7. The immobilized complex of claim 1, wherein the catalytically active metal contained in the immobilized metal chelate complex is selected from the group consisting of Zn(II), Cu(II), Co(III), Fe(III), Pb(III), Mg(II), Mn(III), Ni(III), La(III), Ce(III) and Eu(III).

8. The immobilized complex as claimed in claim 1, wherein the support is a self-organized polymolecular association.

9. The immobilized complex of claim 8, wherein the self-organized polymolecular association support is a support selected from the group consisting of liposomes, micelles and tubules.

10. The immobilized complex of claim 1, wherein the metal ion is complexed with a chelating agent selected from the group consisting of bipyridines, terpyridines, cyclic chelating agents, and acrylic group-containing chelating agents.

11. The immobilized complex of claim 10, wherein the metal ion is complexed with a chelating agent selected from the group consisting of 4-vinyl-4'methyl-2,2'-bipyridine, 1,4,7-triazacyclononane, 1,4,7,10-tetraazacyclododecane, tris-(3-aminopropyl)amine and analogs and derivatives of these compounds which exhibit an effective level of chelating activity to complex with the metal ion.

12. A method of making an immobilized metal chelate complex in accordance with claim 1, the method comprising the steps of:

a) providing at least one chelate which includes a chemically reactive group;

b) chemically reacting the chelate with a support utilizing the chemically reactive group contained in the chelate to form a support with the chelate covalently bonded thereto; and

c) contacting the chelate-containing support with a catalytically active metal ion to complex the catalytically active metal ion with the chelate which has been covalently bonded to the support.

13. The method of claim 12 wherein the chemically reactive group contained in the chelate is selected from the group consisting of amino groups, epoxide groups, acrylates, vinyl groups and silyl groups.

14. The method of claim 12 wherein the support is capable of adsorbing a material selected from group consisting of phosphates and phosphate esters.

15. A method of making an immobilized metal chelate complex as claimed in claim 1, the method comprising the steps of:

a) providing a first monomer comprising at least one chelate and at least one polymerizable group; and

b) polymerizing the monomer to form a polymer having a plurality of covalently bound chelate groups;

wherein one of the monomer or the polymer is contacted with a metal ion which is capable of catalyzing the hydrolysis of one or more phosphates and phosphate esters such that the resultant polymer contains a plurality of covalently bound metal chelate complexes.

16. The method of claim 15, wherein the monomer comprising at least one chelate is reacted with at least one additional monomer in step (b) to provide co-polymeric support.

17. The method of claim 16, wherein at least one of the monomers is selected so that the copolymer is capable of adsorbing compounds which contain one or more phosphate, phosphono and phosphoro groups.

18. The method of claim 15, wherein the polymerization step (b) is carried out in the presence of a compound selected from the group consisting of phosphates, phosphate esters and transition state analogs of phosphates and phosphate esters; and further comprising the step of removing said compound from the polymer after the polymerization step (b) to provide a polymer which includes imprinted binding sites for at least one said compound.

19. The method of claim 13, wherein the monomer is selected from the group consisting of vinyl monomers and acrylic monomers.

20. The method of claim 19, wherein the monomer is selected from the group consisting of 2-ethyl-2(hydroxymethyl)propane-trimethyacrylate, divinyl benzene, acrylic acid,

methacrylic acid, trifluoro-methacrylic acid, 2-vinylpyridine, 4-vinylpyridine, 3(5)-vinylpyridine, p-methylbenzoic acid, itaconic acid, 1-vinylimidazole, and mixtures thereof.

21. A method for the decontamination of a compound which contains one or more phosphate, phosphoro and phosphono groups, the method comprising the step of: contacting the compound with at least one immobilized metal chelate complex as claimed in claim 1 for a time period sufficient to hydrolyze at least some of the phosphate, phosphono or phosphoro groups in said compound.

22. The method as claimed in claim 21, wherein the immobilized metal chelate complex is immobilized on a support which is capable of adsorbing said compound and said contacting step is carried out for a time period sufficient to also permit adsorption of at least some of said compound onto the support..

23. The method as claimed in claim 22, further comprising the step of treating the support with a metal ion capable of catalyzing the hydrolysis of one or more groups selected from the group consisting of phosphate groups, phosphono groups and phosphoro groups to hydrolyze at least some of the adsorbed compound.

24. The method as claimed in claim 23, wherein the metal ion is complexed with a chelating agent selected from the group consisting of bipyridines, terpyridines, cyclic chelating agents, and acrylic group-containing chelating agents.

25. The method as claimed in claim 24, wherein the metal ion is complexed with a chelating agent selected from the group consisting of 4-vinyl-4'methyl-2,2'-bipyridine, 1,4,7-triazacyclononane, 1,4,7,10-tetraazacyclododecane, tris-(3-aminopropyl)amine and analogs and derivatives of these compounds which exhibit an effective level of chelating activity to complex with the metal ion.

26. The method as claimed in claim 24, wherein the metal ion is selected from the group consisting of Zn(II), Cu(II), Co(III), Fe(III), Pb(III), Mg(II), Mn(III), Ni(III), La(III), Ce(III) and Eu(III).

27. A method for the decontamination of a compound which contains one or more phosphate, phosphono and phosphoro groups, the method comprising the step of: contacting the compound with at least one support that is capable of adsorbing the compound for a time period sufficient to adsorb at least some of the compound.

28. The method as claimed in claim 27, further comprising the step of treating the support containing the adsorbed compound with a metal ion capable of catalyzing the hydrolysis of a phosphate ester to hydrolyze at least some of the phosphate, phosphono or phosphoro groups in said compound.

29. The method as claimed in claim 28, wherein the metal ion is complexed with a chelating agent selected from the group consisting of bipyridines, terpyridines, cyclic chelating agents, and acrylic group-containing chelating agents.

30. The method as claimed in claim 29, wherein the metal ion is complexed with a chelating agent selected from the group consisting of 4-vinyl-4'methyl-2,2'-bipyridine, 1,4,7-triazacyclononane, 1,4,7,10-tetraazacyclododecane, tris-(3-aminopropyl)amine and analogs and derivatives of these compounds which exhibit an effective level of chelating activity to complex with the metal ion.

31. The method as claimed in claim 29, wherein the metal ion is selected from the group consisting of Zn(II), Cu(II), Co(III), Fe(III), Pb(III), Mg(II), Mn(III), Ni(III), La(III), Ce(III) and Eu(III).